

Distr.
RESTRICTED

LC/R.832
January 15, 1990

ENGLISH
ORIGINAL: SPANISH

ECLAC

ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN

PUBLIC POLICIES FOR THE DEVELOPMENT
OF DAIRYING IN LATIN AMERICA

This document was prepared by Mr. Emilio Polit G., consultant for the Joint ECLAC/FAO Agriculture Division within the framework of the project The Role of Agricultural Employers as a Class in Latin America, financed by the Netherlands government. The opinions expressed herein are the exclusive responsibility of the author and may not necessarily coincide with those of the Organization.

90-1-50

CONTENTS

	<u>Page</u>
INTRODUCTION.....	1
TYPOLGY OF PUBLIC POLICIES APPLIED IN LATIN AMERICAN DAIRY ACTIVITY	3
A. Traditional or protective market policies	5
B. Neoliberal or aperturist market policies	7
C. Institutional promotion policies	11
D. Comprehensive institutional promotion policies	18
CONCLUSIONS	23
BIBLIOGRAPHY	27

INTRODUCTION

In Latin American countries, milk and its by-products are an indispensable part of basic population consumer goods. Milk's contribution in satisfying minimum nutritional and dietary requirements is very significant. However, there are serious deficiencies in the manner in which both production and consumption are organized. The production process is notably heterogenous; consumption, for its part, is extremely segmented. In effect, a high percentage of small producers and peasants deliver milk directly to consumer centres, whether in the form of raw milk or as a handicraft by-product, while medium and large producers deliver milk to processing plants and industries. On the other hand, low-income consumers purchase raw or pasteurized milk when they can, and by-products only very rarely, while medium and upper income groups consume only pasteurized milk and the entire gamut of by-products.

In Latin America the rate at which the demand for milk products has grown has been somewhat more intense than that of domestic production. This is partly a result of the differences in productivity existing within the subsector and partly the result of the acute processes of urbanization and income concentration which occurred in recent decades. The gap that was thus created between dairy supply and demand contributed to intensifying the inflationary processes affecting the countries of the region, whenever milk is a wage good and a high percentage of family expenditure is destined to food. The difference between demand and supply has in part been corrected through an active import policy.

Latin American countries have attempted to deal with this situation by raising their domestic production, but the conjunct of elements we have indicated and, in particular, competition stemming from developed countries, have caused the expansion of the Latin American dairy subsector to travel along a particularly rocky path. The expansion of dairy production has therefore required a series of policies which, depending on their style, intensity, viability and innovative capacity, have slowed or speeded up the rate of dairying in countries of the region.

This document proposes to classify dairy policies according to the way in which the instruments that allow for their

implementation have been handled. For this purpose information on the dairy subsector of twelve countries of the region has been reviewed, which the Food and Agricultural Organization of the United Nations (FAO) and the Joint ECLAC/FAO Agriculture Division had at their disposal. The information is neither very rich nor very systematic and in the majority of cases it only covers the period between 1970 and 1987.

These limitations prevented us from preparing as in-depth a typology as we would have liked, but the marked difference in emphasis and purpose which exists between policies of the various countries has attenuated, if only partially, this methodological difficulty, and has served as a guide for the typology presented here.

TYPOLOGY OF PUBLIC POLICIES APPLIED IN LATIN AMERICAN DAIRY ACTIVITY

In the typification of dairy public policies we propose here, the main element of differentiation has to do with varying profitability, that is, with prices, credit, subsidies, investments and other such factors.

The first major difference that we can verify in the application of these instruments has to do with the relative importance of resource allocation proceedings, that is to say, whether by market or by state, bearing in mind that, in practice, these actions are mutually complementary or conditioned, depending on the social context involved. Thus we have established two major divisions in dairy policies which, in one case, we call market policies and, in the other, institutional promotion policies. Market policies correspond to sections A and B of the text; institutional promotion policies to sections C and D.

Now, in those policies we refer to as market, that is, those in which the allocation of resources depends essentially, though not exclusively, on the action of said mechanism, two types are distinguished in turn, depending on whether market operation is regulated or controlled by the state or, conversely, whether it is wholly given to the open interplay of supply and demand. In this way, market policies are subdivided into two specific types, traditional or protective market policies and neoliberal or aperturist policies. Section A deals with the first, section B with the second.

Traditional or protective market policies act, as their name implies, in accordance with a protective and selective style, whose greatest effect seems to make itself felt on production costs. The setting of producer prices for milk or its by-products, the setting of consumer prices, the establishing of quotas or surcharges for powdered milk imports and, subsidies on input prices are some of the measures which characterize protective market policies.

The second type of market policy is made up of those we call neoliberal and aperturist policies, which we examine in

section B. As was indicated, they correspond to policies in which resource allocation depends entirely on the free operation of the market, without there being at least visible interference by the state or, institutional signals which orient this allocation. The incentive for competition which generally arises from unprotective policies makes for the liberal handling of instruments to tend to result in more productive efficiency and technological change. In this case, unlike that which occurred with protective market policies, prices are free, tariff barriers disappear or are reduced to a minimum and credit and its cost are transacted in accordance with what the market determines.

We shall now briefly consider the second major group of dairy policies, that is, those which we call institutional promotion policies and which we examine in sections C and D of this study. As was indicated, what is involved are those policies in which resource allocation depends primarily but not exclusively on state action. In this case, resources are generally allocated through institutional channels and therefore circulate at the margin of the market. This is in effect what tends to occur with part of the resources invested in infrastructure (such as irrigation works, storage centres, transportation, construction or the purchase of dairy farms or pasteurizing plants), in research and adaptation of technology and in support services such as technical assistance and training. The same applies to resources destined to social food or nutrition programmes benefitting groups with lower purchasing power. To fulfill these tasks, the state normally requires the setting of standards and the imposing of mandatory plans and programmes aimed at rectifying the short-comings of resource distribution caused by the market.

Institutional promotion policies will always have a component that is dependent on the market. However, unlike primarily market policies, in the former the state is not at the service of this mechanism but, instead, uses it to implement measures corresponding to the general strategy established. This then, is the meaning of price controls and regulations, credits and imports which arise in this case.

Institutional and market policies seek to achieve a similar objective, which is the raising of profitability, but they follow different strategies. The first, in effect, operates according to a plan, which, at the same time as it looks to increase profitability, it also seeks to ensure a sustained growth of milk supply, for the ultimate purpose of this growth being translated into structural transformations of the dairy subsector.

In section C of this study we shall deal with institutional promotion policies and in section D with comprehensive institutional promotion policies. The difference between these two lies in the degree of institutional and bureaucratic control

exerted by the state in the production process of milk and its by-products and by the degree of organization and participation of the social agents involved in this productive activity.

A. TRADITIONAL OR PROTECTIVE MARKET POLICIES

As we define it here, traditional market policy is that implemented by the public sector to grant direct protection to producers, industrialists or consumers. Instruments applied in this respect (price setting or other controls, credit subsidies and those for importing products or inputs, standards pertaining to quality control and marketing channels, etc.) are aimed in different directions, but they generally tend to reduce production costs, to increase profit margins and to encourage the process of accumulation and, by acting on milk product prices, to control the rise in cost of living. However, since these incentives act in a selective manner and benefit some sectors at the expense of others, it becomes necessary to have other measures available, sometimes later, sometimes simultaneously, to compensate those affected. Implementation of these policies may, in the long run, end up slowing net growth of the sector or subsector in which they occur.

In recent decades, the countries of the region have at one time or another applied these policies in their dairy subsectors. Following we give some examples which seem to illustrate particularly well the genre of policy we are trying to define.

In the mid seventies, producer prices in Argentina were readjusted according to a new calculation of milk production costs, while consumer prices remained stable and with ceilings. These measures certainly benefitted producers and consumers, but not so the dairy industrial sector, which shouldered increases in raw material costs as well as reductions in marketing margins. To these was added another restrictive measure, i.e., taxes levied on external trade of powdered milk and milk products, a restriction which became more acute due to the exchange lag in force during that period. Nevertheless, there were also compensatory measures which aimed at guaranteeing profitability of the industrial sector. In effect, credit lines were maintained for the dairy industry and new ones were opened, which, in addition, enjoyed lower interest rates than those on the market and which were destined precisely to palliate increases experienced in production costs. This measure was complemented in turn by the lifting of taxes burdening capital goods' imports (machinery) required by the dairy industry and which up until then had been subject to a series of restrictions.

In Colombia, dairy policy has generally aimed at protecting the industrial sector, particularly milk product producers. Up

until the end of the seventies producer prices for milk were fixed, while the price of milk by-products remained free. Subsequently, in the present decade, although there were brief periods of control, producer prices were also decontrolled. Under these circumstances, medium and large producers were able to negotiate better terms for the price of milk used by industry in the production of by-products. However, at the same time, and as a way of compensating industrialists, raw material imports destined for industry were freed from the restrictive quota system in force up until that time, and controls were also lifted on consumer prices for pasteurized milk. In passing it may be mentioned that small producers took advantage of this opportunity to market close to 70% of their production in the form of raw milk and handicraft cheeses, whose prices, as well as the sanitary conditions under which they were processed, were not subject to any kind of controls due to the exiguous nature of farming infrastructure.

Credit resources which the public sector destined for the support of the Colombian dairy subsector were aimed preferentially at medium and large farms, which were the ones contributing the greater part of national raw material employed by processing industries. Farms used those credits preferentially to construct the infrastructure necessary for handling milk, that is, in general, for storage, conservation, and hygiene of the product, and they relied on the technical and training assistance of industries to execute this phase of the dairy process.

What occurred in Peru during the second half of the preceding decade provides another good example of the way in which protective policies act; in this case the role played by import policies and their negative impact on production and profitability of the Serrana region, the main dairy region of the country is particularly highlighted. Throughout this period, prices received by producers located mostly in this area, were maintained without review, even reaching the point of being reduced, despite the fact that during this period producers were contributing, on average, 53% of the total volume produced. Conversely, the import policy on powdered milk was extremely active, permitting processing industries to significantly reduce their costs, thanks to special tariffs and to the lags they enjoyed in exchange rate. Between 1975 and 1979, milk processed in the country contained 70% of imported raw material. The remaining 30% was made up of fresh milk that was national in origin, and part of whose cost was absorbed by the state, which, in effect, paid a set amount to industries using it. To exonerate this policy of "reverse protection" one would have to say that in Peru, more than 80% of dairy farms are owned by small producers, who, despite their generating 70% of national raw milk production, destine 60% of what they produce to self-consumption, to the feeding of calves and to direct sales. The fact then that

small producers do not send more than 40% of their production to processing plants is only partly due to marketing problems, because, in actuality behind this fact are concealed serious deficiencies in productivity and infrastructure which affect them. In effect, it is very probable that not only would the absolute quantity but also the percentage of their production delivered to industries increase considerably if these deficiencies were overcome.

In Bolivia, and Ecuador similar producer pricing policies were implemented, i.e., control via ceilings or direct price setting. In both cases, however, the price of by-products was free. On the other hand, in Ecuador the public sector also resorted to importing powdered milk, particularly during the previous decade, subsequently reconstituting it and mixing it with liquid milk of national origin, to the even greater detriment of direct producers. The price paid by the pasteurizing industry for this particular product was significantly lower than the price paid to national raw milk producers, which meant that the pasteurizing industry was receiving a direct subsidy in this respect.

An attempt has been made to justify the selective or discriminatory nature of market incentives (which, as seen, tended to be to be detrimental to direct producers) maintaining that these policies protect consumer incomes and improve their food level. However, what these policies caused in the majority of countries of the region was, in fact, a segmenting of consumption both in terms of quality and diversity of milk products. This segmenting arose essentially from the implementation of a policy of free pricing for by-products and a reduction of costs for milk destined for pasteurization. In Brazil, for example, consumer sale prices were set for pasteurized milk so that in this case, discrimination occurred at another point, namely, between the pasteurizing and the processing stages of by-products, since small plants are only allowed to pasteurize, while the large ones are responsible for producing by-products.

B. NEOLIBERAL OR APERTURIST MARKET POLICIES

Market policies which are neoliberal in nature are those which seek to affect profitability variables by letting the market freely determine resource allocation. In this case the state only exercises indirect control, attempting to improve overall efficiency and productivity without benefitting or protecting specific groups, that is to say, without adopting discriminatory measures, at least in appearance. The instruments applied have to do with variables that are macroeconomic in nature (exchange rate, inflation, foreign terms of trade) whose adequate

management would allow for the leading of the economy towards growth, stabilization and competition within a context of equilibrium.

Neoliberal policies had an influence on the development of the dairy subsector in those countries which promoted openness of their economies for relatively extended periods. Therefore we shall not deal here with those countries where neoliberal types of measures were implemented under very limited circumstances and for very brief periods and which for that very reason, did not have a chance to modify the development strategy in force. Such was the case, for example, with the dairy programme implemented in Colombia in 1987, through which the setting up of a milk marketing fund was established with resources from large producers and private industrialists: these resources served to encourage the processing of national raw materials and to promote consumption of dairy products. Neither shall we deal here with the case of Guatemala, whose government decontrolled liquid milk prices in 1981, due to the impossibility of reaching an agreement on prices with Altiplano producers, for the most part, small and medium producers.

None of the countries in which the designated neoliberal policy was implemented in a general way were able to apply it fully in the dairy subsector, due essentially to the resistance put up by this sector (in conjunction with some other agricultural sectors) to the unprotected state in which this policy appeared to leave them. In this way, various neoliberal measures whose implementation was attempted in the subsector had to be modified to be converted into measures that were traditional or protective in nature.

At the end of the preceding decade and beginning of the present one, milk volumes processed in Argentina underwent severe stagnation and even a reduction in absolute terms. Per capita domestic consumption dropped from 219 litres in 1976 to 196 litres in 1982. Industrial efforts were geared to a large extent to processing cheese for export, taking advantage of both the elimination of taxes and other restrictions on dairy product sales abroad, as well as the raising of the real exchange rate for the entire economy. A measure which contributed significantly to giving greater competitiveness to Argentine cheese was the modification of the food code provided for by the adoption of more stringent quality controls for the production of this by-product. Thanks to the improvement in relative prices, cheese export volumes multiplied more than threefold in the period mentioned, while the production and export of condensed milk, powdered milk and butter were reduced considerably.

The search for export markets for cheese, the most competitive product in international trading for this period, yielded returns upon the export quota to the United States being

substantially raised by virtue of an agreement reached within the framework of the General Agreement on Tariffs and Trade (GATT). However, Argentine producers, industrialists and consumers began to exert pressure to revert the policy of indirect unprotection affecting them. Tax exemptions on imports and the subsequent entry into the country of highly subsidized dairy products by member countries of the European Economic Community (between 1978 and 1982, for example, milk powder and butter imports increased by more than 30%) caused a plummeting of profitability and even in some cases a saturation of the domestic market. The government then responded to these pressures by reimplementing a set of tariff protection measures relative to the entry of finished dairy products and other tax exemption measures for imports destined to upgrade industrial infrastructure. One way of consolidating this protection which we call reactive was the creation of a dairy industry commission, a private agency responsible for negotiating and agreeing with the public sector on policies aimed at promoting development of the dairy sector. Agreements reached by the government and this commission sought to conjugate greater protection and defense of the domestic market with greater efficiency of the producing sector. In effect, by virtue of these agreements technological research was supported and encouraged, oriented to improving both the quality of raw milk being delivered to industry and to the pasteurization process and, to raising the protein component of liquid milk. Likewise consumer liquid milk prices were set, while by-products and other milks remained with free pricing. New quality control measures were also enacted as were measures for the marketing of milk produced by small producers. These measures, together with the setting of liquid milk prices demanded by low-income consumers, had the effect of segmenting and specializing the dairy products market for both producers and consumers.

Rigid control of consumer prices caused a significant lag in producer prices. As a result of this, the production of pasteurized milk was reduced by 9% in 1984, even affecting normal supply of the product. To remedy this situation, that same year the state set up a system of automatic adjustment of producer prices, which permitted producers to know in advance what income they would receive during the year. The measure was maintained until 1987 and during that period milk production rose by 30%.

The neoliberal paradigm which was implemented in Chile from 1975 onward, radically altered the previous approach of comprehensive economic policy and with it, dairy policy. That year, all controls on milk producer prices were eliminated and at the same time free trade of dairy products was encouraged through openness of the country to imports and the setting of extremely low tariffs. The stated purpose of these measures was to raise overall productive efficiency and, thus, the capacity to compete in the international market. However, in reality, large milk producers and by-product processors were indirectly but markedly

benefitted. In effect, to meet the objective of increasing overall productive efficiency, the government provided for a set of measures supposedly aimed at raising the technical level of the transformation process, whose immediate result was, nevertheless, the widening of demand for pasteurized milk and milk products. In 1978, a system of milk control and classification according to grades and quality conditions was implemented, specifying process analyses, laboratories of reference and supervision mechanisms for that effect. The cost of these regulations, paid for by industry, was shifted onto consumer sale prices. As in other countries, in Chile the formation of segmented markets was also fostered, both on the side of transformation activity as well as on the side of consumption. In effect, three categories of milk consumption were created: (A, B and C), which at the same time were a way of establishing a hierarchy between direct milk producers and prices paid to them for milk.

Emphasis on the need to raise technical levels and efficiency at the processing phase was confirmed from 1978 onward, a year in which mandatory compliance with a food sanitation regulation was declared, containing specific standards for containers and labelling of milk and its by-products.

However, the policy of openness towards dairy product imports was only able to be applied in Chile for one year (1975). In 1976, political pressure by medium and large producers in some way forced the government to levy new taxes on powdered milk, which were added to the uniform schedule of customs duties in force at that time. In 1977 the measure was extended to the remainder of milks and by-products, and the levels of those duties continued to be revised up until 1983, in which year the measure ceased to be implemented. In 1984, minimum tariff values were imposed on dairy products to protect them from subsidies granted by exporter countries to their domestic producers. This measure is still in effect today. In 1985 new tariff surcharges were applied on powdered milk, butter and cheese. The protection which the government offered the dairy sector was not only geared to the exterior; it also operated within the country, as is manifested, for example, by the financial support which the public sector granted processing plants so that these could permanently maintain open purchasing leverage vis-a-vis producers. This support was more intense during those months in which the drop in milk production forced the accumulation of stock.

In other countries of the region, the application of free market policies had other kinds of effects. Producer agents of the dairy subsector generally reacted in anarchic fashion to these measures, due, above all, to the fragility of existing production conditions and to the various and numerous subsidies which had been granted to processing and industrial plants in

previous periods. These facts prevented modernizing technology from translating into greater degrees of efficiency, precisely because this requires not only a previous reliance on a solid domestic productive base, but in addition that the latter be strengthened by state incentives and support, which would allow it to deal with new profitability requirements imposed by the marketplace. This was particularly applicable to what occurred in Peru during the period 1980-1985, when producer and consumer prices were decontrolled, and all subsidies granted to imported dairy inputs up until that time were reduced or practically eliminated. In addition, the public sector ceased to provide aid in areas of technical assistance, credit and marketing (aid which, in any case, was very scanty, especially in the sierra). This fact, added to a series of substantial deficiencies, as for example, the inexistence of storage infrastructure, of an adequate road and transportation network and the absence of standards and mechanisms relative to quality control and hygiene of the product, caused a crisis in the supplying of milk to processing plants. Dairy processing costs soared, being subsequently passed on to consumers and, in addition, translating into a more acute inflationary process. This difficult situation was partially overcome thanks to increases in productivity of the Lima dairy basin, located in the coastal area. This positive outcome was basically due to the maturing of investments in major irrigation works constructed in that region the previous decade and to the openness of the real estate market that brought with it the implementing of neoliberal policies, which, among other things, promoted large scale replacement of agricultural crop farming for dairy farming.

C. INSTITUTIONAL PROMOTION POLICIES

This third category will attempt to describe those actions by which the state sets limits on market operation (whether it be a free or protected one) and seeks to overcome problems of stability which could result in the economic cycle or over the short term from the application of given measures. In some cases, institutional promotion policies aim at satisfying basic social needs or at resolving problems of poverty or inequality, without prejudice to permitting market forces to act with a certain degree of liberty in those productive areas which operate in a profitable manner. The public decisions we are referring to here are removed from the purely commercial distributive paradigm to the extent that they act through the formulation and implementation of urgent plans and programmes, whose social expenditures and investments are therefore not subject to impositions of supply, demand and pricing, although, as is natural, they necessarily have repercussions on the performance of these variables.

One of the most important manifestations of promotion policy in countries of the region, was the construction of dairy industrial plants. In this case, public agencies generally took upon themselves the partial or total design, siting, and even construction of the plants, which, once finished, were normally passed onto cooperative producer hands.

In the majority of countries of the region, these policies effectively contributed to promoting dairy activity, especially during the present critical decade. In effect, during this period, these policies placed greater emphasis on reducing the heterogeneity existing among producers, attempting to broaden opportunities for small producers and peasants. On the other hand, attempts were also made to improve food safety and to raise the nutrition levels of low-income consumers through subsidized dairy product distribution programmes. In general, these plans relied on the complementary or principal contribution of various international agencies in such decisive areas as financing, technology or training.

Public organisms also promoted fodder production, genetic upgrading of cattle, use of mechanized equipment and everything related to raising productivity.

Following, we shall examine the way in which promotion policies acted in some countries of the region.

In Bolivia, for example, the institutional dairy promotion policy came into existence in the early part of the seventies with the creation of the Dairy Industry Enterprise (EIL) an agency in charge of coordinating dairy development of the country. In 1974, EIL, with the support of the World Food Programme (WFP), started up the first pilot project for the promotion of dairying.

Subsequently, and up until the end of that decade, it constructed and administered five processing plants which, in passing it may be said that, currently they only operate at 30% capacity. The policy for production promotion was essentially based on farm assistance which was distributed according to existing infrastructure and the possibilities they had vis-a-vis the market. At the same time, the processing plants opened up stable and total purchasing leverage for small producers, who, in addition could choose the destination of their production. That is, they could choose whether it became cheese, by-products or whether it was to be sold in the form of pasteurized milk: plants paid different prices depending on the quality of shipments and the final form they adopted. In addition, small producers received technical and financial support, as well as advance payments for the purchase of inputs, implements and the leasing of machinery at below-market prices.

In the current decade, EIL and WFP have undertaken a programme of modules of dairy development which essentially consists of training groups of peasants so that they may then work collectively for a period of four years in the dairying. In addition, the peasants receive technical, veterinary and credit assistance.

As was indicated above, state promotion policies were undertaken in an environment dominated by neoliberal-type policies, so that in many cases they adopted the forms typical to these. Thus it has occurred in Chile since 1983, a country in which state measures tend to operate through market mechanisms.

The maintenance of purchasing leverage permitted the state to continue being, if not the main, at least one of the most important receptors of powdered milk produced in the country, milk which was subsequently destined to stock complementary food programmes (maternity-infant) which the National Health Service was in charge of.

However, unlike what occurred prior to 1973, currently state demand can be covered by both domestic and external products: the choice depends exclusively upon price, so that the incentive for production in this case is somewhat less direct, since what is intended with these purchases is, in addition, and primarily, to regulate the supply and prices of processing companies.

From 1983 onward the promotion policy implemented in Chile has allocated resources for improving the production conditions of small producers, especially in terms of storage infrastructure, and hygiene and conservation conditions, in order to ensure and increase milk deliveries to industry. Thus, for example, storage centers were created with steel tanks that allowed for milk to be conserved at adequate temperatures and under better hygienic conditions, which evidently resulted in costs reductions to small producers. This programme designated "one of recovery and upgrading of dairying in small agricultural areas" was implemented in conjunction with the public agency, the Corporation for Promotion of Production (CORFO) and a private entity, the Milk Technological Centre. Along these same lines, the public sector supported a programme for upgrading handicraft cheese factories, which essentially consisted of training small producers to allow them to improve the hygiene and quality conditions of cheese production and thus raise their efficiency. It is useful to point out here that handicraft cheese factories currently contribute over 50% of the country's cheese production.

In strictly institutional terms, the public sector reactivated the National Milk Commission (CNL) from 1983 onward, an agency responsible for coordinating the activities of various segments of the dairy subsector. The Commission primarily took upon itself the task of expanding demand for milk products, with

the double purpose of assuring the industries' market and of raising per capita consumption levels of the population. As of 1986, various promotion and education campaigns were started, aimed at improving this indicator, which in 1985 reached only 53% of the level recommended by FAO.

The thoroughness, scope and efficiency of these policies varied as a function of the control exerted by various private groups on public decision-making. In Colombia, for example, as recently as 1987 the practice of controlling quality in the production and processing phases of milk and its by-products was begun, because only then were major producers and industrial plants, who systematically rejected quality control, convinced to finally accede to it.

On the other hand, in Colombia public measures were also taken that were similar to those of other countries of the region. So it was that, in order to increase intermediate demand for national raw material and to improve consumption levels, the public sector created a marketing fund and carried out educational campaigns on the nutritional value of dairy products. These programmes were financed with state and private resources. The implementation of the subprogramme called "drop of milk", which consisted of providing the product to the infant population at subsidized prices, was carried out on the basis of purchases and external donations.

In other cases promotion policy had to be implemented circumstantially on the market in order to exert more permanent effects on domestic production and on social distribution. Such was the case with Ecuador, where increases in private processing and industrialization activity and the milk export boom throughout the seventies caused severe price distortions and the subsequent rejection by consumers at popular levels. From 1980 onward, the public sector then implemented control measures on volumes of powdered milk imported and at the same time set distribution quotas in accordance with the processing capacity of plants, in order to ensure that these would also make room for national raw milk. In addition, milk reconstituted with national inputs was given a better price than that using imported inputs. The government at the time took advantage of this difference to carry out a massive milk distribution programme to marginal and low-income groups, the price of which was, thanks to subsidies, nearly three times lower than that prevailing in the market.

In Ecuador, state policy for the promotion of dairying in the latter part of this decade aimed at supporting assistance programmes to small peasant producers who formed part of integrated rural development projects. These programmes were officially managed and implemented by international agencies and foreign governments, such as FAO, the World Bank, the Agency for International Development (AID), the Government of Switzerland,

the Government of the Netherlands and others, in the areas of handicraft cheese factories, farm processing and marketing of milk and training in dairying.

Mexico and Panama are perhaps the countries where state presence was strongest in dairying. Like other countries of the region, these two nations used the market as an intermediary, but the degree to which the public sector imposed and controlled the strategy of activity was, in this case, much greater. However, these countries emphasized different aspects of this activity; Mexico did so in the processing and consumption phases, to a certain extent disregarding production; Panama preferred to aim at production. From 1984 onward, however, both countries had to extend control and planning of those phases which up until then had remained relatively free from state intervention.

In Mexico, the governments of the last two decades imposed the achieving of self-sufficiency in food as a primary objective. Milk occupied a preponderant place in this task. However, as it was indicated a moment ago, Mexican public policy tended to benefit the urban consumer more than the productive sector. In any case, the state played a very active role in allocating resources for production. Thus, for example, the public sector continuously imported an important proportion of calves from the United States and Canada which formed a replacement herd and, likewise, financed the importing of half the semen doses destined for artificial genetic improvement.

Through state policy incentives, minor irrigation works were likewise constructed in zones specializing in milk production, the Altiplano and the north of the country and numerous research projects were developed to adapt dairy cows to the climatic conditions of the tropics, a zone with a double purpose, i.e., suitable for beef cattle ranching and to a lesser degree for dairying, but in any event, superior to the Altiplano and the northern zone due to its wealth in water resources. However, these policies turned out to be insufficient: milk supply did not reach the level which government had planned, primarily because other complementary measures were lacking or were very scarce, such as, for example, those pertaining to technical assistance for shoring up storage and marketing mechanisms and for training producers.

On the other hand, the price-setting policy applied by the Mexican public sector increasingly narrowed the margin between the price paid by processing plants to direct producers and the price charged consumers for liquid milk. The subsequent reduction in profitability forced 65% of pasteurizers to withdraw from that line of business in the past fifteen years, with only the most mechanized plants remaining in operation, which in any case, in 1984 operated at only 50% capacity. On the other hand, pasteurizing plants were officially forbidden from diversifying

into cheese, cream or butter production. State policy, in effect, sought to benefit the dairy product industry by giving it freedom in pricing and sparing it any competition. Thanks to these two measures, by-product production rose by 30% between 1975 and 1984 and, the number of industries rose by 20% with the emergence of 70 new plants.

Finished product imports were also controlled by the public sector, the only one empowered to effect purchases abroad. These consisted primarily of dehydrated milk, which the state sold at subsidized prices to multinational companies such as Nestle and Carnation and to the state industry, Liconsa, through a system of quotas fixed in conjunction with the private sector and the public sector. Up until 1984, however, the quota obtained by Liconsa was not lower than 52% of the total. Imported milk was rehydrated, combined and reconstituted at lower costs than those of national liquid milk and, thus, the product reached consumers at indirectly subsidized prices. In that way the use of national inputs was discouraged and domestic producers were negatively affected. In 1984, for example, 70% of liquid milk reached consumers in the form of raw milk. This spurred the state to readjust producer prices in accordance with cost inflation, and at the same time, to allocate a minimum earning to these, set at 14%. From that year onward, private investments in dairying increased, taking advantage of both the new profit margin as well as of the reorganization of import policy, which now went on to give preference to the purchasing of machinery, equipment and dairy cattle. These purchases were backed by a series of subsidies, which consisted essentially of tax exemptions, tariff reductions and preferential interest rates for credits destined for the purchase of these inputs. Mexican dairy policy thus began a kind of return to the traditional protective genre. To use the terms of our categories, it may be said that, to a certain extent, in 1984 there was a shift from institutional promotion policies towards traditional market policies, because, in effect, market signals once again went on to have significant bearing on resource allocation and reallocation decisions, with a greater proportion of resources being aimed, in this case, at the productive phase, in an attempt to raise its profitability.

In Panama, meanwhile, the reverse was occurring: the 20% reduction experienced by dairy production in the two year period 1972-1974 forced the government to reactivate the policy of intervention in the sector from the middle of that decade onward. Thus it was, for example, that in 1976 the government at the time created the National Dairy Promotion Board, an agency with executive powers, responsible for encouraging the expansion of milk production, supply and processing. The various programmes started up as of that year gave a great boost to the productive phase, while resource allocation to the processing and industrialization phases was partially left to the free

functioning of the market, as was the handling of other variables, such as prices and credit.

Programmes aimed at encouraging production covered key aspects of the dairy process. In all cases the Panamenian state began and directly administered the first stages of these activities and then, once the investments matured, it transferred the activities themselves or their effects to private producers. In this way both improved pasture and fodder as well as equipment were introduced, which were sold to producers at subsidized prices and with preferential lines of credit. To improve the genetic quality of the herd, the public sector carried out massive importing of male and female Holstein and Swiss Brown breeds, which cattle after being adapted to zones located at over 1000 metres above sea-level, were sold to producers at equally advantageous terms. The state also constructed plants for mixing molasses with urea for the purpose of providing alternative food sources for dairy cattle and for overcoming the seasonal phenomenon and, installed warehouses for distributing the blend at various points along the Pacific coast, the main dairy zone of the country. Likewise, irrigation works were constructed, such as wells and small dams for supplying water to the cattle zone. Lastly, the state purchased dairy farms in order to transform them into experimental centres which could subsequently transfer their technical know-how, especially regarding herd management and artificial insemination.

However, 85% of Panamenian milk producers are small peasants and were consequently not in a technological nor financial position to benefit to any due extent by the great advantages resulting from the policies indicated. Aware of these problems, the state then put into effect, from 1982 onward, a dairy development pilot project aimed at small producers in the Azuero region, the zone which concentrates 60% of total producers and which generates 55% of national dairy production. In this project the five state dairy farms to which we referred a moment ago were used, in an attempt to deal in them with the problems regarding herd improvement, transfer of technology and supply of inputs, as well as those relating to upgrading of storage and marketing infrastructure.

In 1984, the National Milk Commission, an agency jointly created by the public and private sectors a few years prior, affirmed that only 16% of the milk delivered to industries was destined for pasteurization, and that on average, industries dedicated only 60% of their capacity to working with national raw material and 40% to processing imported raw material. To remedy this situation the public sector then provided for an extensive series of measures aimed at institutionally controlling the sectoral phases and variables which had functioned in a relatively free manner up until that time. Thus, for example, powdered milk imports were reduced and tariffs were established

for the introduction of dairy by-products; the price of all dairy products was fixed, using the cost of national raw material as a base; sanitary controls were broadened to include milk destined by industries for the processing of by-products and, the sale of non-pasteurized products was prohibited; raw milk prices were unified and periodic readjustments of these were provided for as a function of their hygienic quality. The National Milk Commission was entrusted with setting consumer milk and milk product prices. Unlike what occurred in Mexico where resources were redirected towards the productive phase, protective policies implemented in Panama were overwhelmingly geared to the agroindustrial phase of the dairy process.

D. COMPREHENSIVE INSTITUTIONAL PROMOTION POLICIES

What we call comprehensive in scope refers to promotion policies which, unlike those we looked at above, attempt to modify the structural conditions of the dairy subsector in all its aspects, through the application of a vast development and transformation plan. In this case, policies continue to rely on the market in an attempt to bridge the intrasectoral productivity gap, i.e., that which separates small producers from large and medium producers in this respect, but they do so within the framework of the planning process which aims at transforming the organization of labour, social relations and power structure of the sector. Nonetheless, their effects could even extend to other sectors of the economy and, in the final analysis, to the national economic system as a whole. As is evident, how in-depth these transformations are will depend on the greater or lesser efficiency with which the plan is implemented.

In terms of dairying, none of the countries examined fit this description exactly. However, the remarkable quantitative results of some experiences, to a certain extent give an account of the existence of such a phenomenon as the one we have defined. In effect, the presence of a subsector with its own dynamic visible in it, which induces and encourages improvements and transformations in other activities and variables that are global or national in nature. In order to obtain these achievements, promotion policy have to favour such aspects as the organization and participation of productive agents, systematic training, nutritional education, the shared benefitting of advantages imparted by economies of scale, the openness and dynamization of export markets.

Two countries, Uruguay and Costa Rica are notable in this respect in the region. Compared to the rest of the countries, the results which they achieved in the milk sector are, in fact, surprising. In the first, dairy product exports increased by 107.4% in the five year period 1982-1986 and, in Costa Rica,

yields (measured in kg/cow/year) grew by 41.5% for the same period, while the Latin American mean for this indicator dropped by 3.2%.

The type of comprehensive promotion applied in Uruguay was the result of institutional modernization which the National Dairy Producers Cooperative (CONAPROLE), a semipublic entity in charge of the execution and control of the country's dairy policy, underwent for half a century. Its main function is that of supplying liquid milk consumption in Montevideo, gathering and conditioning for this effect, milk delivered by private producers through a quota allotment system. Therefore, it is not so much a production cooperative per se, but in fact it controls a good part of the production process. Producers are located for the most part in the Montevideo dairy basin and the greater number and intensity of various promotion actions are concentrated precisely in that region. Currently, 85% of production delivered to processing plants is channelled through CONAPROLE. The greater part of producers possess family-type exploitation units; thanks to the fact of their having assured their income and working capital through institutional means, these producers consolidated productive specialization of the units at relatively stable levels of profitability. On the other hand, affected by the deterioration of international meat prices and the persistent exchange rate lag which came about between 1975 and 1982, and in search of a more profitable activity, many cattle ranchers recently shifted to the dairy sector.

Various programmes which arose from the institutional relation between the state and CONAPROLE in the first half of the sixties, matured in the mid seventies, particularly with respect to technology investments. In effect, the incentive granted to research on fodder and its adaptation, in which New Zealand technology was employed, permitted cattle feeding to improve significantly. The same occurred with the management of artificial pasturelands, with a 100% increase in surface area planted with this type of pasture in only three years (1977-1980). CONAPROLE carried out educational campaigns for producers on milk extraction and product handling and implemented a massive installation programme of cooling tanks in farms. The Cooperative was even in charge of gathering milk in bulk and destined transporters equipped with cistern tanks for this. The efficacy of these measures was reflected, for example, in the fact that, while in 1961 producers delivering raw milk to pasteurizing plants accounted for only 38% of milk producers, in 1980 they rose to 74%.

During the early seventies, public policy set standards regarding hygiene-sanitary conditions of the production process of dairy farms, and CONAPROLE established a bonus system over base price, depending on the quality of milk delivered. These two policies, that of control and incentives, allowed many producers

who were previously not interested in selling to CONAPROLE or who did not comply with standards for doing so, to now become integrated into the cooperative system.

The greater inflow of milk to processing plants led CONAPROLE to improve and modernize the processing and industrialization phases. The expansion of this segment of the dairy system had as a framework the industrial development plan that the Cooperative implemented during the period 1965-1980, which basically consisted of an infrastructure investment programme: construction and start-up of four receiving centres, three pasteurized milk processing plants, three industrial plants for powdered milk, cheese and casein and, the purchase of the already-mentioned fleet of vehicles with cooling tanks.

Thanks to these investments, the installed processing and industrialization capacity of the Montevideo basin was, by 1976, already 70% higher than that in existence in 1965. It should be mentioned here that the growth rate of Uruguayan dairy agroindustrial productivity during the five year period 1975-1980 was higher than that obtained by the entire food industry, and even higher than that of the manufacturing sector.

In 1970 a compensation fund was created, a mechanism aimed at subsidizing production costs of the industrial sector through reduction of the fat content of the milk that producers sent to pasteurizing industries. This subsidy, added to the increase in productivity of pasteurizers, greatly reduced costs, which allowed the by-product industry to penetrate into the external market with very advantageous prices. In effect, from 1975 onward, the State began an intense process of openness towards external markets through bilateral agreement mechanisms, and obtained agreements with Argentina, Brazil, Iran, the Soviet Union and Mexico, so much so that dairy exports, which in 1976 accounted for 8% of the country's total exports, rose to account for 17% in 1982 and over 30% in 1988.

Now, in domestic terms, pricing policy consisted essentially of establishing two types of prices. The price of milk destined for pasteurization (price-quota) was set above the price of milk destined for processing of by-products (price-industry), in accordance with a ratio established by the state and which, on average, was equal to 1.7 during the last five years. This price-quota advantage guaranteed a stable supply of pasteurized milk throughout the entire year; for its part, price-industry was fixed by CONAPROLE, and this allowed the cooperative to regulate its profits and investments and to eventually reduce the processing of some relatively unprofitable domestic consumption products (e.g. casein) in order to intensify processing of other more profitable ones and with better export perspectives, such as powdered milk and cheese.

In the case of Costa Rica, the starting point of the great changes which occurred in the dairy sector was relatively recent (1982), and corresponded to the decision by the state to achieve national self-sufficiency. These changes were inserted in a very critical period in the country's development and that of the entire region. Unlike Uruguay, the promotion mechanism used was not a nucleus of institutional power, but the dairy programme which began to be implemented in 1983 for meeting the objective of national self-sufficiency which, as we mentioned, the state had established in 1982.

Some of the instruments applied were the already traditional mechanisms of incentives such as technical assistance and credit, via a reduction in market-state; others, however, such, as for example, the organization of producers into cooperatives and the massive construction of infrastructure in rural cantons, permitted the generating of and benefitting from economies of scale, each time these measures benefitted a great number of producers.

The policy which provided an initial approach to the dairy promotion programme in 1983 was the expansion of the dairy cattle frontier, that is, the successful incorporation of the country's lowlands into profitable production of this sector. This success allowed the programme to become increasingly autonomous with respect to the overall economic policy of the country and, autonomous also in the sense of generating its own resources. Small producers predominated in the area mentioned; up until 1982 their costs were so high that not only did they prevent national self-sufficiency from being achieved, but also they failed to bring about certain minimum conditions for production stability and the more dynamic increase of productivity. The main thrust of subsectoral planning efforts and pertinent support policies were therefore aimed at these. The public sector financed this support by assigning part of the resources previously destined to the meat subsector to milk production.

The effects of the incentive policy soon let themselves be felt. The number of dairy farms increased markedly, especially those located in the northern zone, which in 1988 rose to contribute 45% of total milk supply, and annual growth rate of production was 9% between 1980 and 1986, that is to say, more than triple population growth. The installation of 25 storage centres in rural communities significantly reduced transportation costs. These centres, in addition, boasted cooling equipment and laboratories for controlling product quality and hygiene, which permitted the almost doubling of production delivered to plants.

Profitability and capital accumulation in the sector were practically assured by various mechanisms which conjugated the action of three elements, namely, that of market, that of the state, and participation by social agents. Price management was

probably the most important mechanism. According to this mechanism, the public sector set minimum producer prices and maximum consumer prices. Prices were reviewed and readjusted annually as a function of the performance of production costs and those demanded by milk processing. For its part, by-product pricing was free, but ceilings were established for marketing margins. One proceeded in the same manner for liquid milk. In 1982 the national banking system signed an agreement with the state for promoting the establishment of new dairies and the construction of basic works in farms through a stable line of credit. Thanks to the rapid achievement of national self-sufficiency and to the generation of production surpluses, this line of credit was able to be oriented in 1986 to improving and extending those dairy farms which had not as yet met the delivery quota established with the processing plant or with the cooperative in which they were registered.

In effect, one of the main elements underlying the success of the dairy promotion programme in Costa Rica was the existence of a vast cooperative organization which vertically integrated the productive, processing and distribution phases of the dairy process. Seventy percent of producers were integrated into this organization, which sold 84% of the country's total production. The dairy cooperative sector owned and administrated the processing plants and storage centres distributed throughout the various zones of the country, it processed the entire gamut of products deriving from milk, from pasteurized milk to ice-creams, and partially controlled the distribution of all these products to consumers. It also operated at the productive phase, processing food concentrates for dairy cattle and supplying equipment and other inputs to its members. In the case of Costa Rica, the degree of development reached by cooperativism permitted it to be increasingly less dependent on state incentives and controls.

From 1986 onward, three new strategic dairy promotion programmes were started up. The first consisted of mass distribution and consumption of milk for the benefit of families with lower purchasing power; the second was a technological research programme, specifically destined to study ways of adapting and producing improved fodder in order to reduce dairy herd feeding costs; the last referred to the openness of markets for encouraging milk by-product exports.

CONCLUSIONS

If we jointly review the four types of dairy policies which we referred to above, we can assert that in the first instance there was strong institutional control on the subsector, a control which to a certain extent tended to become diluted later on, due to the necessity of making other mechanisms come into play to compensate for the negative effects of the first measures, however, in such a way that in many cases these compensations ended up eliminating the positive effects on profitability and growth of the first measures. In this sense, it should nevertheless be mentioned that the handling of variables pertaining to profitability, in particular those of pricing and subsidies, tended to give a greater boost to the agroindustrial phase than to the productive phase, which resulted in a marked preference for imported dairy products, in detriment to the demand for national raw material. As a result of this decreased demand and of the direct intervention implied by the setting of national raw milk prices, profit margins for direct producers were reduced, while profit margins for processing industries were controlled through cheap imports and pricing freedom for milk products, that is to say, through indirect mechanisms.

The preference given by dairy policy to the agroindustrial phase prevented the productive phase from having, except in specific cases, more systematic support, which was expressed in the absolute reduction shown by productivity in recent periods. Public investment in infrastructure and in technological adaptations for production was very scarce, as was the prescribing of sanitary and hygiene standards aimed at improving product quality. Both facts, in conjunction with others, prevented producers from enjoying better prices over the long run. The high percentages of production which circulated through informal marketing channels and the growing participation of handicraft activity in the processing of by-products bore witness to how inoperant these public policies were in promoting milk production.

Orthodox and heterodox market policies which were systematically implemented in all countries of the region only succeeded in stabilizing milk supply in those cases where the

state maintained relatively constant purchasing leverage for industries. However, import policies for milk and its by-products for which the public sector showed such a leaning, prevented investments aimed at raising productivity from providing yields. The fact that the clearest signals emitted by the market with regard to improvement of profitability pointed, above all, towards processing and industrialization caused this segment to modernize rapidly and to tend to function in an oligopolistic way, each time that its production overwhelmingly turned towards preferentially satisfying demands from medium and upper income consumers.

The lone operation of market mechanisms was unable to ensure profitable working conditions for small producers, who make up 75% of the total. To correct this situation and to satisfy social needs which are not defrayable by effective demand, public policy had to assume a more active role vis-a-vis the dairy subsector, especially in the current decade. On the other hand, the chain-link reaction of phenomena which arose from the financial crisis of recent years, namely, forced savings of foreign exchange, import reduction and the resulting need to intensify national production, caused an even greater amount of state intervention, which, in passing could, in addition, now glean policy benefits deriving from the fact of it presenting itself as promotor of food safety and national self-sufficiency.

In this way there was an intensification of protectionist and selective traits in dairy public policy of recent times, which were characteristic of the agricultural development of a quarter of a century ago, but less paternalist and bureaucratic, where consensus and decentralization now prevailed. Proof of this were the producer organizations and industries, the mixed public and private sector commissions created for defining controls and investments, as well as the numerous and active presence of international agencies and instances of bilateral cooperation in promoting the development of dairy producers who lacked influence in capital circles.

In a similar sense one may grasp the formulation and implementation of renewed guidelines, plans and programmes for promoting dairy activity, to which the majority of countries of the region subscribed in the last five years. Some of the strategic objectives of these new instruments of institutional policy were, for example, the development of research projects aimed at adapting technology which will help to raise productivity; greater state presence in the storage and processing of milk; the setting of profitable producer prices, and controls on dairy imports. As we know, the interest shown by public policy to a great extent arose from the severe deficiencies which exist in food and nutritional conditions of large segments of the population, but it was also an indirect response to the distortions generated by the presence of

multinational companies and capital in the domestic agroindustrial phase, a presence which meant, among other things, the growing subordination of direct producers to conditions imposed by receiving plants.

Despite the possibility of low priced dairy imports being an ever-present threat for domestic production and productivity, and despite also that the acute segmenting of the consumer market deepened inequality and poverty, Latin American dairying, seen at the level of countries, is showing results, which, if not encouraging, are at least not so woeful as those exhibited during the latter part of the previous decade and beginning of the present one. In order to consolidate this trend, public policy management should perhaps be aimed in particular at overcoming the conflict between stability, growth and market, a solution which would possibly permit the mitigating of the difficult situation which vast social sectors of the region still find themselves in, due to the effects of the erratic and disordered functioning of food systems in force.

BIBLIOGRAPHY

- Banco Central de Costa Rica (1988), Cifras sobre producción agropecuaria, 1977-1986, (Figures on agricultural production, 1977-1986), San Jose, February.
- Banco de Guatemala (1982), La ganadería lechera en el Altiplano central y la costa sur, informe económico, (Dairy farming in the central Altiplano and the southern coast, an economic report), Guatemala City.
- Banco Nacional de Comercio Exterior (1979), "La producción de leche y sus problemas" (Milk production and its problems), Comercio Exterior (Foreign Trade), vol. 29, No. 2, Mexico, F.D., February.
- Brossard, Francine (1988), "Perú: Monografía del sector lechero", (Peru: Monograph on the dairy sector), study presented at the workshop on the role of agricultural employers as a class in Latin America. Joint ECLAC/FAO Agriculture Division, Santiago, Chile, July.
- Centro de la Industria Lechera (1976), Memoria, Ejercicio No. 56. 1974-1975, Buenos Aires.
- (1980), Memoria. Ejercicio No. 60. 1978-1979, Buenos Aires.
- CORFO (Corporación de Fomento de la Producción) (Corporation for the Promotion of Production) (1985), Estudio del potencial pecuario. Estructura económica del subsector lechero chileno. (Study on cattle-raising potential. Economic structure of the Chilean dairy subsector), Santiago, Chile.
- Corporación Boliviana de Fomento (Bolivian Development Corporation) (1978), Programa de fomento lechero. Informe trienal 1974-1977, (Programme for the promotion of dairying. Three year report 1974-1977), La Paz.

Dirección de Sistemas y Producción Animal (Systems and Animal Production Board) (1981), Sistema global. Leche y derivados. (Overall system. Milk and its by-products), volumes I, II & III, document for discussion, Sistema Alimentario Mexicano (Mexican Food System), Mexico, F.D.

Departamento de Desarrollo Agropecuario (Department of Agricultural Development) (1979), "Colombia. Producción, comercialización y procesamiento de leche y productos lácteos", (Colombia, Production, marketing and processing of milk and dairy products), Bogota.

Dirven Martine (1988), "Ecuador: Monografía sobre el sector lácteo", (Ecuador: Monograph on the dairy sector), study presented at the workshop on the role of agricultural employers as a class in Latin America, Joint ECLAC/FAO Agriculture Division, Santiago, Chile, July.

----- (1988), "Uruguay: Monografía sobre el sector lácteo", (Uruguay: Monograph on the dairy sector), study presented at the workshop on the role of agricultural employers as a class in Latin America, Joint ECLAC/FAO Agriculture Division, Santiago, Chile, July.

FAO (Food and Agricultural Organization of the United Nations) (1977, 1982, 1984, 1985, 1986), Anuario FAO de Producción (FAO Yearbook on Production), Rome.

----- (1975), Plan internacional para la coordinación del fomento lechero (PICFL). Informe sobre Colombia. (International plan for the coordination of the promotion of dairying. Report on Colombia) (AGA:ISCDD/COL/1975), Rome.

----- (1975) Plan internacional para la coordinación del fomento lechero (PICFL), Ecuador. Informe Final. (International plan for the coordination of the promotion of dairying (PICFL), Ecuador. Final Report). (WS/H3589), Rome.

----- (1979), Informe al Gobierno del Perú de conformidad con el plan internacional de fomento de la carne y el plan internacional de fomento lechero de la FAO (Report for the Government of Peru in accordance with the FAO international plan for the promotion of meat and the international plan for the promotion of dairying) (W/N1318/c), Rome.

----- (1979), Informe al Gobierno del Perú. Los problemas de abastecimiento de leche a Lima Metropolitana (Report for the Government of Peru. Problems on supplying milk to Metropolitan Lima). (W/N4045), Rome.

- (1979) Plan internacional para la coordinación del fomento lechero (PICFL). Informe de la segunda misión realizada en Bolivia. (International plan for the coordination of the promotion of dairying (PICFL). Report on the second mission undertaken in Bolivia). (AGA/ISCDD-Bolivia), Rome.
- (1982) Plan internacional para la coordinación del fomento lechero (PICFL) y Plan internacional de fomento de la carne (PIFC). Borrador final del informe de la misión de la FAO en el Ecuador. (International plan for the coordination of the promotion of dairying (PICFL) and international plan for the promotion of meat. Final draft of the report on the FAO mission in Ecuador). (AGA/PICFL/PIFC), Rome.
- (1984, 1985, 1986). Anuario FAO de Comercio (FAO Yearbook on Trade), Rome.
- (1984), Seminario Regional FAO/Chile sobre el papel de la lechería en el desarrollo rural, (FAO/Chile Regional seminar on the role of dairying in rural development), Santiago, Chile, November.
- (1986), Taller FAO/Ecuador sobre el papel de las asociaciones de pequeños productores y sistemas relevantes de manejo. (FAO/Ecuador workshop on the role of small producer associations and relevant management systems), Equipo Regional de Fomento y Capacitación en Lechería de la FAO para America Latina y el Caribe (ERFCL-ALC) (FAO Regional Team for the Promotion and Training of Dairying in Latin America and the Caribbean), Santiago, Chile.
- Farah Nayib (1987), "Comercialización de la leche en Costa Rica", (Milk Marketing in Costa Rica), Joint ECLAC/FAO Agriculture Division, Santiago, Chile. mimeo.
- GIA (Grupo de Investigaciones Agrarias) (Agrarian Research Group) (1987), El complejo agroalimentario en Chile: principales circuitos (1974-1986), (The agro-food complex in Chile: main circuits (1974-1986), Santiago, Chile.
- Instituto Nacional de Investigación y Promoción Agropecuaria (National Institute for Research and Agricultural Promotion) (1987). Programa nacional de ganadería, (National cattle-raising programme), Lima.
- Melo Schnitz, Cyro (1986), Análise de produção de leite no Brasil, (Analysis of milk production in Brazil), Federal University of Santa Maria, USINA-Escola de Laticínios, Santa Maria RS, Brazil, mimeo.
- Ministerio de Agricultura y Ganadería del Ecuador (Ministry of Agriculture of Ecuador) (1978), "Situación de las industrias

Ministerio de Agricultura y Ganadería del Ecuador (Ministry of Agriculture of Ecuador) (1978), "Situación de las industrias lácteas en el país Año 1977", (Situation of the dairy industry in the country Year 1977), Quito.

----- (1982) "Situación de las industrias lácteas en el país 1980-1981", (Situation of the dairy industry in the country 1980-1981), Quito.

Ministerio de Agricultura de Chile (Ministry of Agriculture of Chile) (1986): "El sector agrícola chileno. Políticas y resultados", (The Chilean agricultural sector: Policies and results), Santiago, Chile.

Ministerio de Agricultura del Perú (Ministry of Agriculture of Peru) (1986), "Problemática y líneas de acción para el desarrollo de la actividad lechera", (Issues and guidelines for the development of dairying), Lima, June.

Ministerio de Agricultura de Colombia (Ministry of Agriculture of Colombia) (1987), "El sector pecuario en 1986. Análisis y perspectivas" (The cattle-raising sector in 1986. Analysis and outlook), Bogota.

Ministerio de Agricultura, Ganadería y Alimentación de Guatemala (Ministry of Agriculture, Cattle Raising and Food of Guatemala) (1983), Plan nacional de desarrollo pecuario, (National plan for the development of cattle raising), Guatemala City.

----- (1988), "Propuesta política para el fortalecimiento del subsector lechero" (Proposed policy for strengthening of the dairy subsector), Guatemala City.

Ministerio de Desarrollo Agropecuario de Panamá (Ministry for Development of Agriculture of Panama). (1980), "Proyecto de fomento lechero", (Project for promotion of dairying), Panama.

----- (1981), "La implementación de la ley No. 60 y la problemática lechera en Panamá" (Implementation of Law No. 60 and dairying issues in Panama), Panama.

----- (1984), "Anteproyecto de desarrollo lechero para pequeños productores" (Preliminary dairy development plan for small producers), Panama.

----- (1984), "Informe de la Comisión Nacional de la leche sobre la problemática lechera del país", (National Dairy Commission report on dairying issues in the country), Panama.

- Paolino, Carlos (1985), "Diferenciación y cambio técnico: el caso de los productores lecheros de la cuenca de Montevideo" (Differentiation and technical change: the case of milk producers of the Montevideo Basin), Estudios rurales latinoamericanos (Rural Latin America Studies), vol 8, No.1, Bogota.
- Pontificia Universidad Católica de Chile (Catholic University of Chile) (1982), "Evolución y perspectivas del sector lechero" (Evolution and perspectives of the dairy sector), Panorama económico de la agricultura, (Economic Outlook for Agriculture) No. 25, Santiago, Chile, November.
- Tomic, Tonci (1988), "La lechería empresarial en Guatemala", (Dairy employers in Guatemala) study presented at the workshop on the role of the agricultural employers as a class in latin America, ECLAC/FAO Joint Agricultural Division, Santiago, Chile, July.
- University of Costa Rica (1984), "Nuevas estrategias de desarrollo en Costa Rica: la agroindustria y el campesinado" (New development strategies in Costa Rica: agroindustry and the peasantry), Avances de Investigacion (Research Advances), No. 52, San Jose.